

Section 3.5B

Weft Cutters

(Rotary Solenoid-driven)

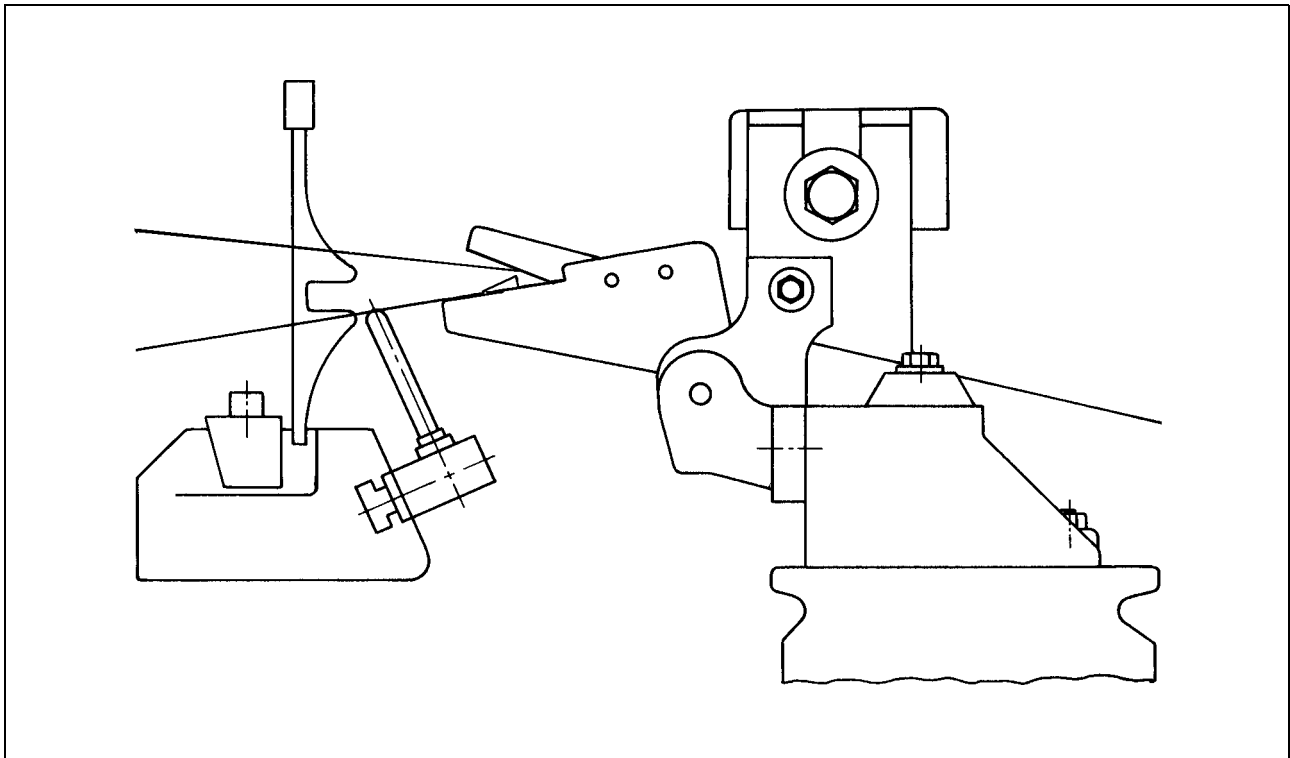
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3. CLOTH TAKE-UP MOTION

3.5B Weft Cutters (Rotary Solenoid-driven)

The weaving machine is equipped with two weft cutters: one is located near the left-hand edge of fabric to cut an inserted weft yarn securely in every weft inserting and beating operation, and the other is near the right-hand edge of fabric to cut a weft yarn between the temple and the temple bar.

Selecting the "temple with lower cover" will choose the mechanical RH cutter (as standard) exclusively designed for temples with a lower cover.



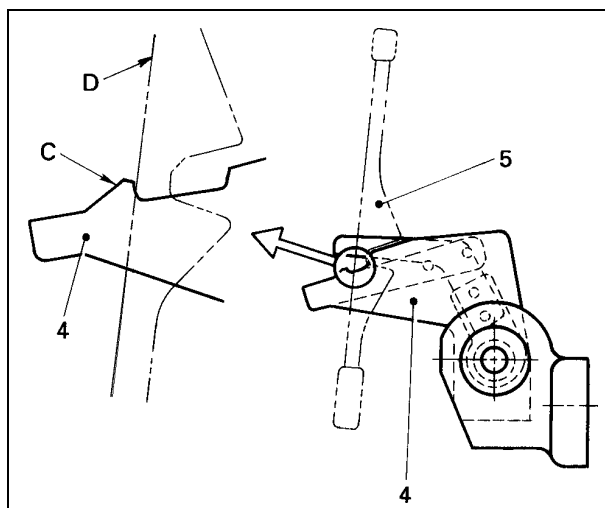
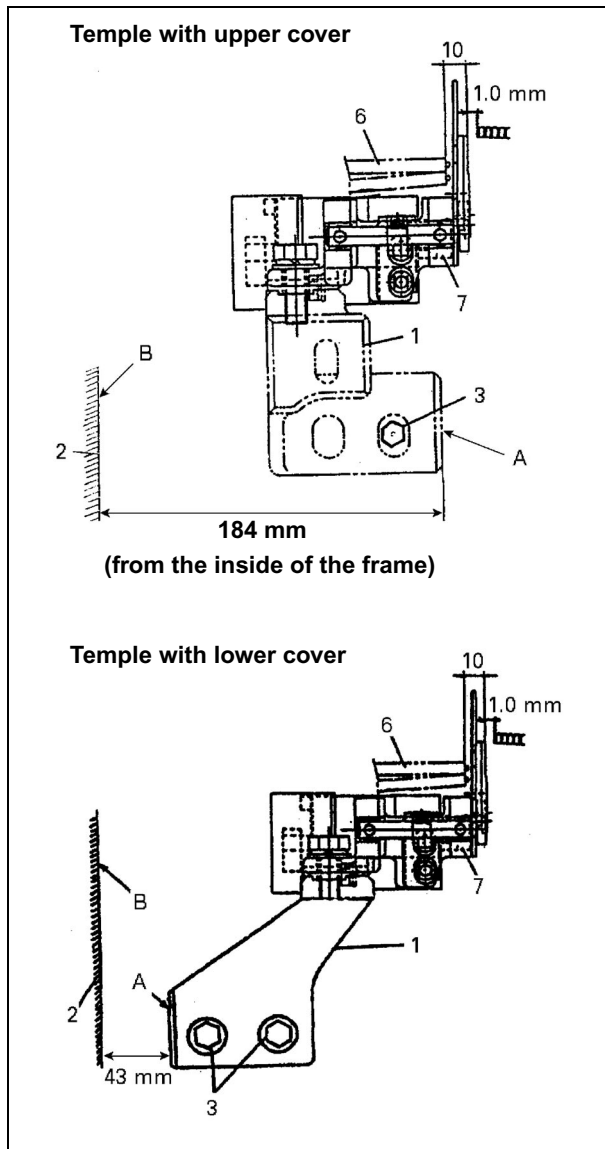
3.5B.1 Rotary Solenoid-driven Weft Cutter for Left Selvage (LH Cutter)

[1] Positioning the LH cutter

- (1) Set the crank angle at 0°.
- (2) Press the emergency stop button down until it locks itself and the machine.
- (3) Right-to-left positioning:
 - For the temple with upper cover
Loosen bolts **3** and move temple bar bracket **1** to the right or left so that the distance from right end **A** of temple bar bracket **1** to inside face **B** of LH side frame **2** becomes 185 mm. Then, temporarily tighten bolts **3**.
 - For the temple with lower cover
Loosen bolts **3** and move temple bar bracket **1** to the right or left so that the distance from left end **A** of temple bar bracket **1** to inside face **B** of LH side frame **2** becomes 43 mm. Then, temporarily tighten bolts **3**.

NOTE: If you adjust the position of temple bar bracket **1** after the start of new fabric weaving, check that the gap between the reed and the LH cutter is 0.5 to 1.0 mm. If the gap is less than 0.5 mm, the reed will come into contact with the LH cutter, resulting in a broken reed.

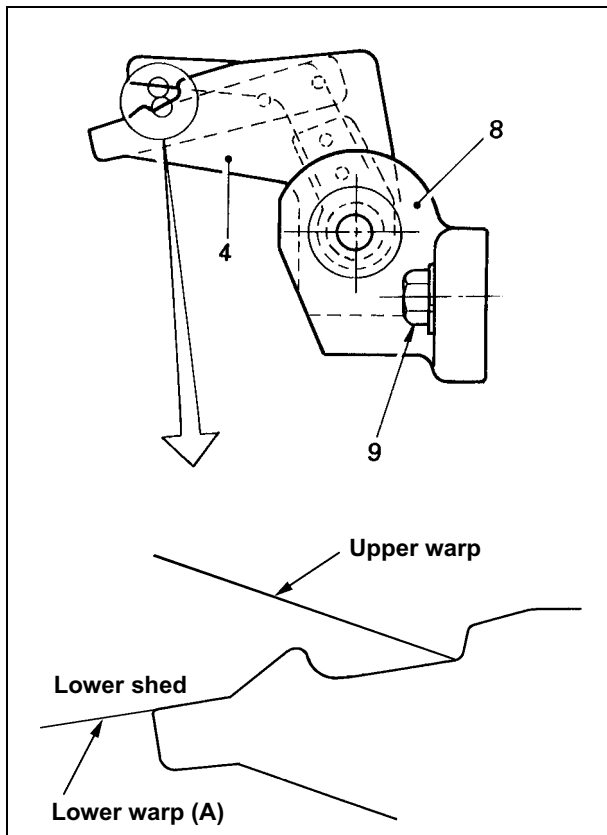
For the adjustment procedure of the LH cutter, refer to Chapter 6, Section 6.1 "Beating Motion."



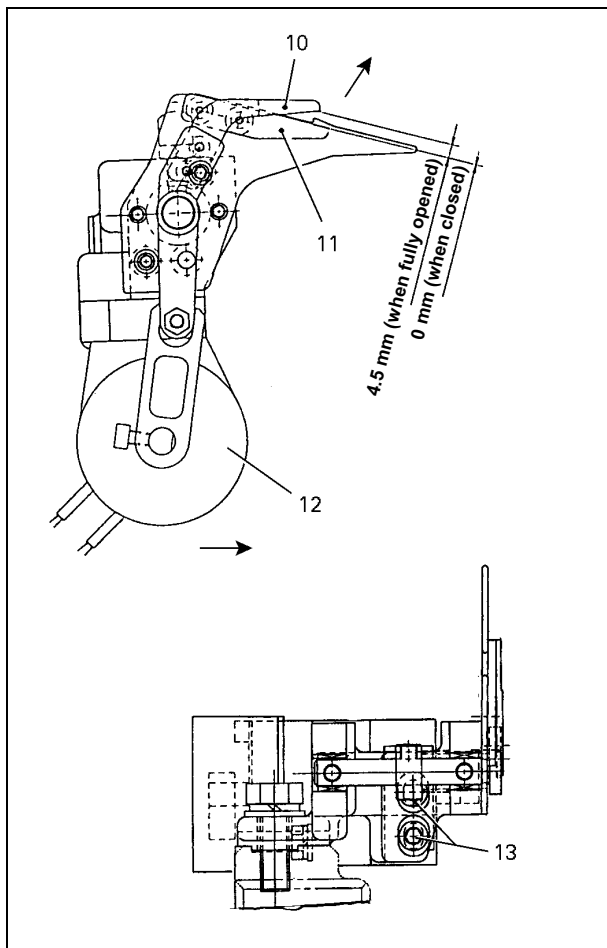
- (4) Front-to-back positioning:
Loosen bolts **3** and move temple bar bracket **1** forwards or backwards so that the rear dent face **D** of reed **5** becomes almost flush with the rear side **C** of the groove of yarn guide **4**. Then, tighten bolts **3** firmly.

NOTE: For 6-color shift versions, check that clearance between main nozzle **6** and cutter bracket **7** is 1 to 2 mm.

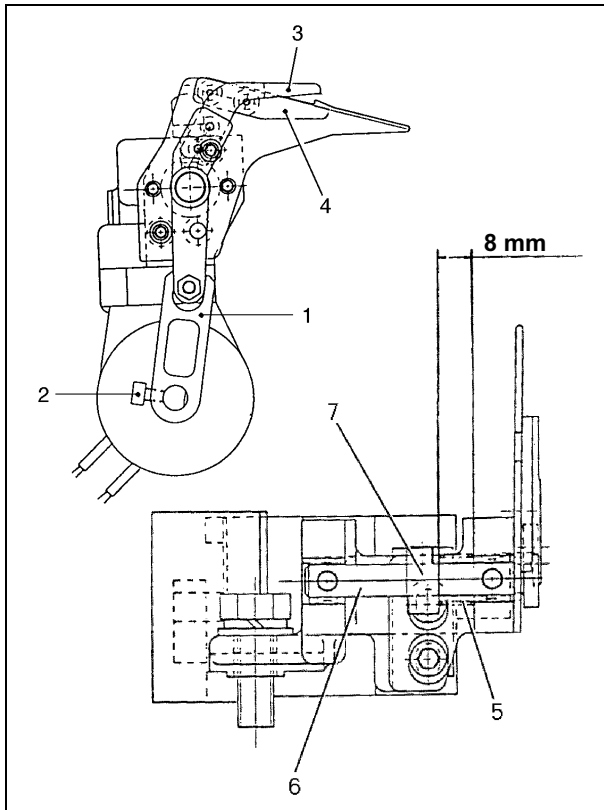
3. CLOTH TAKE-UP MOTION



- (5) Up-down positioning:
 - 1) Set the crank angle at the lower shed (approx. 130°).
 - 2) Loosen bolt **9**.
 - 3) Adjust bracket **8** vertically so that the lower warp line (A) of the lower shed becomes flush with the top face of yarn guide **4**.
 - 4) Tighten bolt **9**.



- (6) Height adjustment of cutter upper blade:
 - 1) Touch **OPERATOR-MANUAL-LH cutter** (on the screen shown on the next page) to drive the LH cutter and then check that the upper blade **10** and lower blade **11** overlap at their tips by 0 to 0.3 mm when the cutter is closed. If the overlap is out of the specified range, loosen bolts **13** and adjust rotary solenoid **12** to the front or rear.
 - 2) Turn off the **LH cutter** switch to open the LH cutter and then check that the clearance between the upper and lower blades is 4.0 to 4.5 mm as standard or 7.0 to 7.5 mm when the machine is equipped with a tuck-in device.

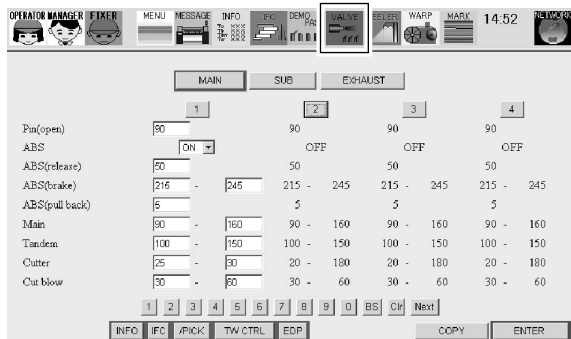


[2] Adjusting the contact pressure between the upper and lower blades

Open upper and lower blades (3 and 4) by 4 mm, then adjust set hoop 7 (by using a hexagonal wrench, 8 mm) so that coil spring 5 becomes 8 mm long.

NOTES:

- Improper contact pressure will result in a "nicked blade edge", "earlier blade wear", "weft cutting failure", and other troubles.
- Apply a drop of oil (Lubricant type A) to the blades from their upper edges once a day.



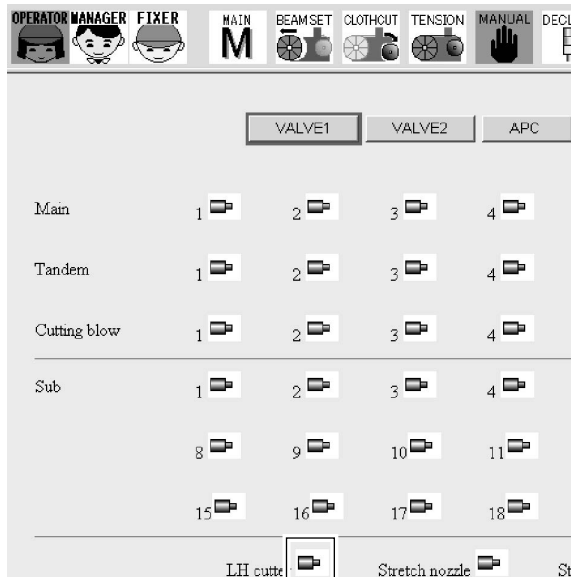
[3] Setting the cutting timing

- (1) Touch **FIXER-VALVE** to call up the screen shown at left. Enter the cutter timing to the Cutter line.

Cutting timing	Typical settings	Setting range
ON timing	25° to 30°	340° to 50°
OFF timing	205° to 210° (ON timing + 180°)	160° to 230°

NOTE: Any values out of the above setting range cannot be accepted.

- (2) Check the operation of the rotary solenoid-driven cutter by touching **OPERATOR-MANUAL-LH cutter**.



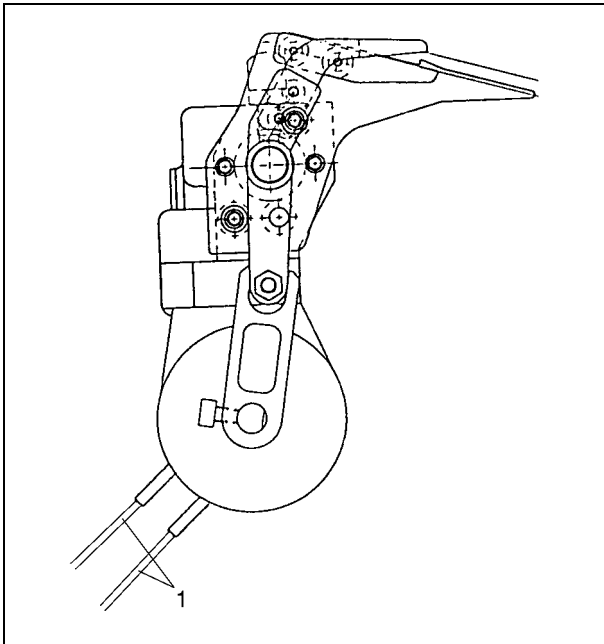
3. CLOTH TAKE-UP MOTION

[4] Checking for dulled blades

- (1) Blow air to the contact between the upper and lower blades to remove foreign materials that might get into the contact.
 - (2) Check that the coil spring is 8 mm long, which determines the contact pressure between the upper and lower blades.
 - (3) Check the upper and lower blades for chip or nick.
 - (4) Apply a drop of oil to the blade surfaces and then test the sharpness of the blades
 - (5) If the blades are still dull after performing (1) to (4), replace them with new ones.
- * Once the blades are whetted, their service life will be shortened to half.

[5] Routing the rotary solenoid cable

CAUTION: When routing rotary solenoid cable 1, take care not to let it interfere with other parts. If coming into contact with other parts, the rotary solenoid cable will swing and may break.

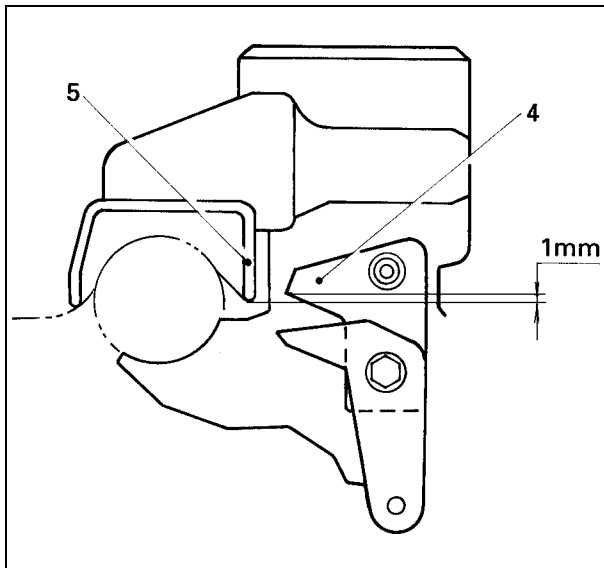
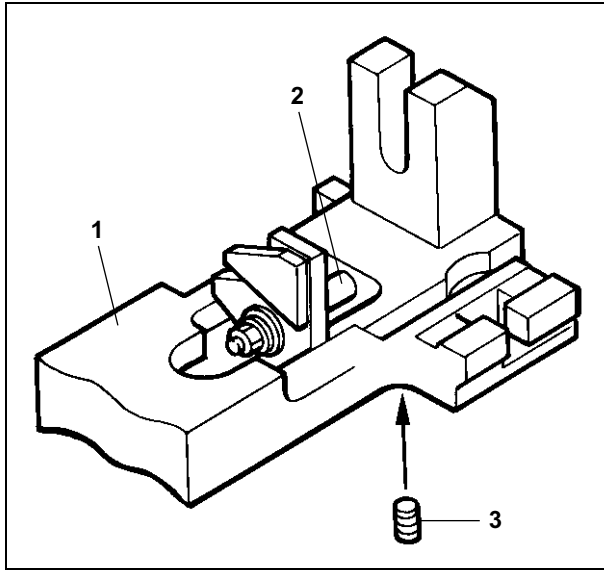


3.5B.2 Mechanical Weft Cutter for Right Selvage (RH Cutter), for Templates with Upper Cover

[1] Positioning the upper cutter blade

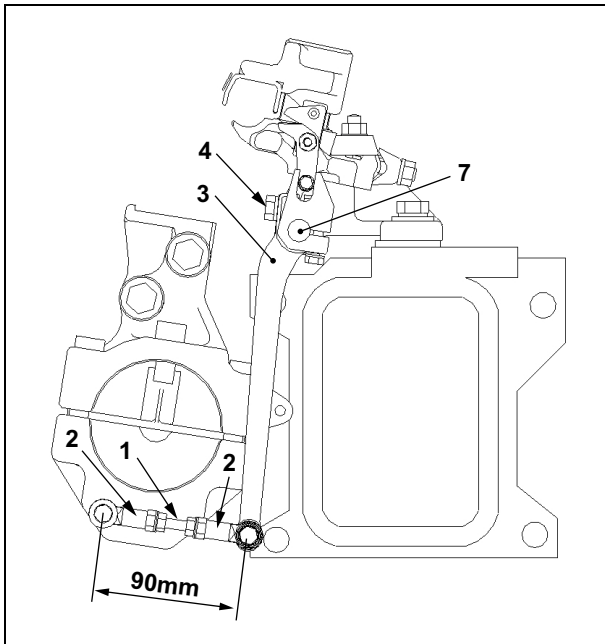
- (1) Press the emergency stop button down until it locks itself and the machine.
- (2) Loosen setscrew 3 which secures cutter pin 2 to temple case 1.

NOTE: The setscrew 3 is located underneath temple case 1.



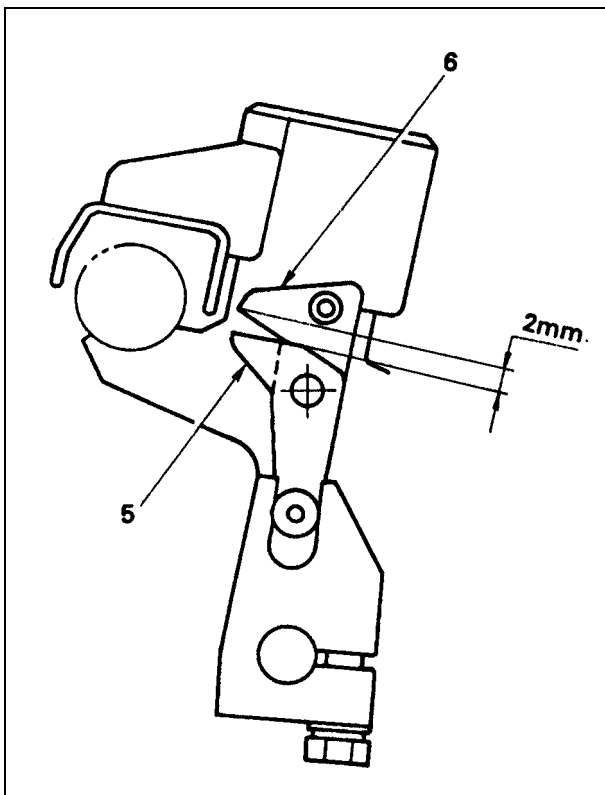
- (3) Adjust upper blade 4 up or down by rotating cutter pin 2 so that the blade tip is placed 1 mm above the lower end of temple cover 5. Then, mount cutter pin 2 with setscrew 3.

3. CLOTH TAKE-UP MOTION



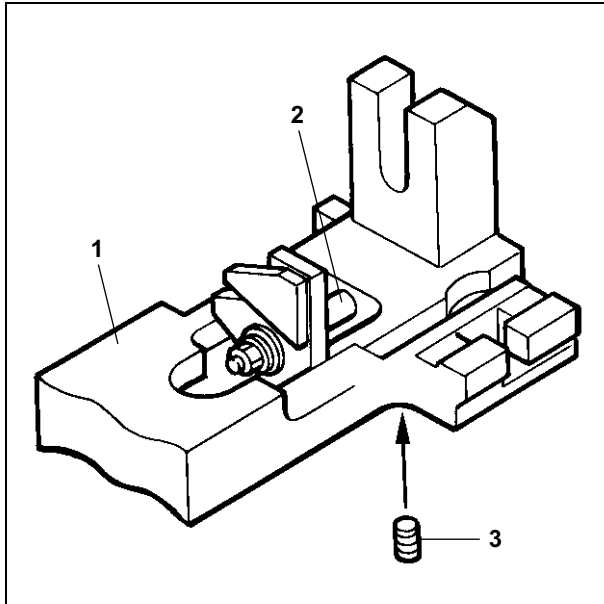
[2] Positioning the lower cutter blade

- (1) Set drive rod 1 so that the distance between each center of rod ends 2 comes to 90 mm.
- (2) Set the crank angle at 180°.
- (3) Loosen bolt 4 that secures rod lever 3.
- (4) Rotate cutter shaft 7 until the tip of lower blade 5 comes to 2 mm below that of upper blade 6. Then tighten bolt 4 to secure rod lever 3 and cutter shaft 7.



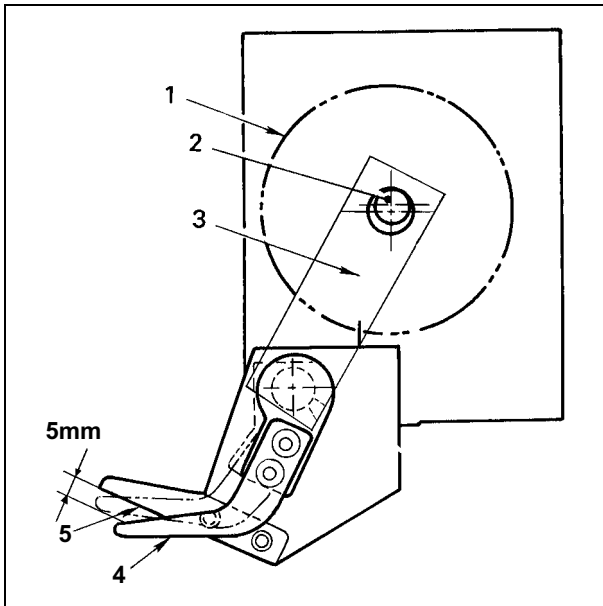
[3] Checking the selvage fringe length

- (1) Release the emergency stop button and weave fabric.
- (2) Check the length of the selvage fringe.
If it is 5 mm or shorter, start weaving.
- (3) If it is more than 5 mm, make the following adjustments:
 - 1) Stop the weaving machine and press the REVERSE inching switch to set the crank angle at 180°.
 - 2) Press the emergency stop button down until it locks itself and the machine.
 - 3) Loosen setscrew 3 which secures cutter pin 2 to temple case 1, then move cutter pin 2 inwards so that the selvage fringe becomes 3-5 mm long. Then, tighten setscrew 3.



NOTE: When adjusting the selvage fringe length, take care not to change the height of the cutter blades.

3. CLOTH TAKE-UP MOTION

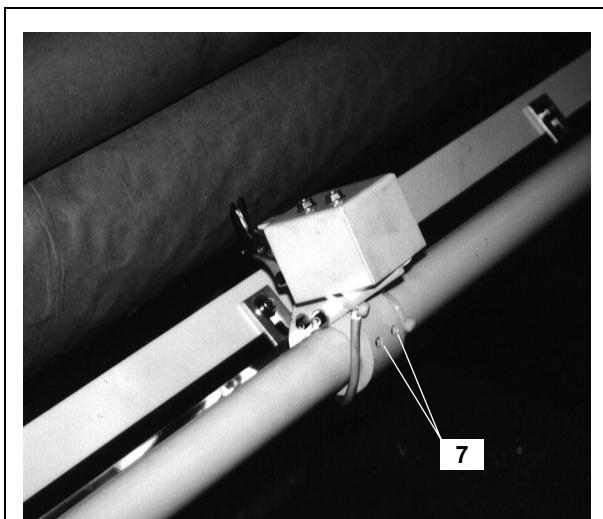


3.5B.3 Electrical Weft Cutter for Center Selvage (Center Cutter), Option

The center cutter is used in dual roll production to cut weft at the center of the fabric, producing two rolls of cloth, each 1/2 the normal width.

The rotation of motor 1 swings cutter lever 3 via coaxial eccentric pin 2. As cutter lever 3 swings, the cutter lower blade 4 shifts up and down to cut off selvage fringe yarn.

To prevent selvage from getting loose at the time of weft cut, the half-leno selvage device (double type) should be selected.



(1) Left-to-right positioning:

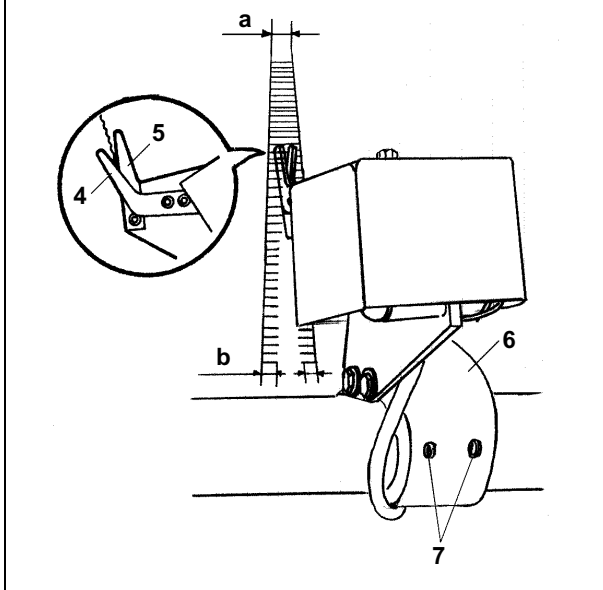
Adjust the weft cutter so that each of selvage fringe "b" comes to 3 to 5 mm (Warp should be drawn so that distance "a" comes to 6 to 10 mm), then secure cutter bracket 6 with setscrews 7.

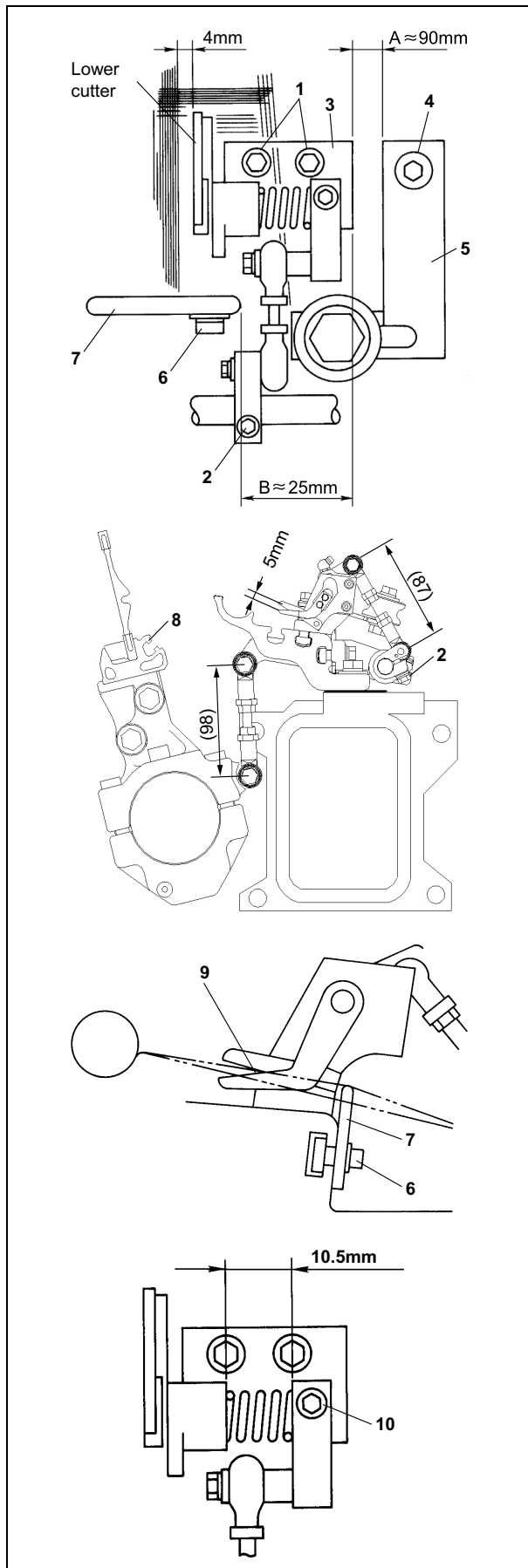
(2) Front-to-rear positioning:

Adjust the weft cutter so that weft comes to the center of cutter upper blade 5 and lower blade 4 as shown at left, then secure cutter bracket 6 with setscrews 7.

NOTE: When winding cloth onto a new cloth roller after cloth beam doffing, be careful with the winding position so that both selvage fringes "b" will be of equal lengths.

Also be careful with the cloth tension at the right and left sides. If the tensions at the right and left sides are not even at the start of cloth winding, the lengths of right and left selvage fringes "b" will also become uneven.





3.5B.4 Mechanical Weft Cutter for Right Selvage (RH Cutter), for Temples with Lower Cover

This weft cutter should be used for those machines equipped with an integrated fell support and with temples having a lower cover.

[1] Positioning the weft cutter

- (1) Press the emergency stop button down until it locks itself and the machine.
- (2) Left-to-right positioning:
 - 1) Loosen bolts **1** and **2**. Adjust the weft cutter so that the distance from the left edge of the lower blade to the cloth edge comes to 4 mm. Tighten bolts **1**.
 - 2) Loosen bolt **4**. Move guide roller bracket **5** to the left until distance "A" comes to approx. 90 mm. Temporarily tighten bolt **1**.
 - 3) Loosen bolt **6**. Move cloth guide **7** to the right or left until distance "B" comes to approx. 25 mm. Temporarily tighten bolt **6**.
- (3) Operating timing of upper and lower blades: Set the crank angle at 180° so that slay **8** becomes retracted to the rearmost position. Make the opening between the upper and lower blades approx. 5 mm, then tighten bolt **2**.
- (4) Cutting point adjustment: Adjust cloth guide **7** so that cutting point **9** between the upper and lower blades becomes aligned with the height of cloth edge. Tighten bolt **6**.
- (5) Contact pressure between the upper and lower blades: Install the coil spring so that its length becomes 10.5 mm, and tighten bolt **10**.
- (6) Do some actual weaving and make right-to-left fine adjustment of guide roller bracket **5** while keeping an eye on the selvage construction state. Firmly tighten bolt **4**.

